

ABSTRACT

A method and apparatus that allows a display device to adaptively and automatically control display contrast and color is disclosed. The method and system in accordance with the present invention can be described by the following sequential process:

1. Separating an input image data value into its luma and chroma components.
2. Collecting the luma distribution data over the entire image or a specified window.
3. Analyzing the luma distribution.
4. Generating an appropriate contrast control response that modifies the input luma component to generate an output luma component, on a pixel by pixel basis.
5. Analyzing the input luma component and the output luma component, and an input chroma component, to generate an appropriate modification for the chroma component, on a pixel by pixel basis.